

# CLAIMS

1. A device for sending a modulated signal, comprising:

- 5 - a plurality of digital symbol sources including at least one first source of M-ary symbols and at least one second source of M'-ary symbols, M and M' being integers such that  $M' > M > 1$ ;
- 10 - interleaving means for receiving successive symbol frames delivered by an active source of said plurality of sources and for generating blocks of successive interleaved symbols each including symbols obtained from at least two frames;
- 15 - modulation means for generating a burst of modulated signal in response to each block delivered by the interleaving means, the modulation means including a first modulator generating a signal burst in response to a block of M-ary symbols and a second modulator generating a signal burst in response to a block of M'-ary symbols;
- 20 - conversion means for converting M-ary symbols into M'-ary symbols; and
- 25 - means for selectively activating the conversion means in response to a change of the active source so that the interleaving means generate at least one block of interleaved M'-ary symbols including both symbols from at least one frame delivered by the second source and symbols obtained by conversion of M-ary symbols from at least one frame delivered by the first source.

30 2. The device as claimed in claim 1, wherein the conversion means are arranged to convert an M-ary symbol

originating from the first source into an  $M'$ -ary symbol constrained to allow only  $M$  of the  $M'$  possible values of the  $M'$ -ary symbols.

3. A device for receiving a signal modulated in the form of successive bursts, comprising:

- detection means for identifying a type of modulation of each burst from among a first type of modulation of  $M$ -ary symbols and a second type of modulation of  $M'$ -ary symbols,  $M$  and  $M'$  being integers such that  $M' > M > 1$ ;
- a first demodulator for producing a block of  $M$ -ary estimated symbols in response to each signal burst for which the first type of modulation has been identified;
- a second demodulator for producing a block of  $M'$ -ary estimated symbols in response to each signal burst for which the second type of modulation has been identified;
- deinterleaving means for receiving the blocks successively produced by the demodulators and for generating frames of successive symbols such that the estimated symbols of each block provide symbols in at least two frames;
- first processing means for processing frames of  $M$ -ary symbols;
- second processing means for processing frames of  $M'$ -ary symbols;
- conversion means for converting  $M'$ -ary symbols into  $M$ -ary symbols; and
- means for selectively activating the conversion means

in response to a change in the identified type of modulation so that  $M'$ -ary symbols extracted from at least one block produced by the second demodulator are placed in at least one frame supplied to the second processing means and so that  $M$ -ary symbols obtained by conversion of other  $M'$ -ary symbols extracted from said block are placed in at least one frame supplied to the first processing means.

4. The device as claimed in claim 3, wherein the conversion means are arranged to convert an  $M'$ -ary symbol constrained to allow only  $M$  of the  $M'$  possible values of the  $M'$ -ary symbols into an  $M$ -ary symbol.